

REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Office Action dated September 10, 2004. In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

Claims 1-12 are under consideration.

Prior Art Rejections

Claims 1, 3-4, and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 6,101,265 to Bacus et al. (hereinafter “Bacus”) in view of U.S. Pat. No. 5,904,822 to Casavant (hereinafter “Casavant”), and claims 2, 5-6 and 8-9 were rejected as being unpatentable over Bacus, in view of Casavant and further in view of U.S. Pat. No. 6,597,383 to Saito (hereinafter “Saito”). These rejections have been carefully considered, but are most respectfully traversed.

The device for selecting an electrophoresis band of interest from a plurality of bands on an electrophoresis lane 603 of a sample of the invention (e.g., Fig. 6), as now recited in claim 1, comprises: a display unit for displaying an image of the plurality of bands established on the lane; a region setting unit for setting a region 602 on the lane 603 on a screen of the display unit; a region altering unit for altering a coverage size (derived from Fig. 6; “*The [coverage] size of the selection candidate region 602 may be altered As the size of the selection candidate region 602 is altered, the selection candidate region band information 609 also changes [e.g., total of bands: 3, Upper side band: 1 Lower side band:1]. P. 16, last three lines to p. 16”*) and a display size (derived from Fig. 16A-B; “*the region 1601 is enlarged in the vertical direction while the position of the cursor 1602 is set at the center*” p. 20, last paragraph) of the region; a selection candidate displaying unit for displaying bands within the region on the lane in a selection candidate state (e.g., ALL band selection mode in ONE lane: Fig. 5); and a band selecting unit for processing the bands in the selection candidate state to be in a selection state.

The invention recited in claim 4 is directed to device for selecting an electrophoresis band of interest is similar to the one recited in claim 1 except (i) that it displaying one of the bands “(ONE band selection mode in ONE lane: Fig. 6),” and that (ii) it replaces “the region altering unit” with “a selection candidate display altering unit for altering the band in the selection candidate state to a band immediately before or after the former band along the electrophoresis lane (Fig. 17; “switching/altering the selected band to a band immediately before or after” p. 21, 1st paragraph).”

The invention is further directed to methods for selecting an electrophoresis band of interest recited in claims 8 and 9 which are implemented by the devices recited in claims 1 and 4.

“By electrophoresis, molecules such as DNA or proteins migrate on a gel by the application of an electric field, thereby being separated and established as bands according to their molecular weights. A range where bands have migrated from the same initial migration point is defined as a lane (p. 1, 2nd paragraph).“ “When the band of interest is very close to another band or is in the middle of a group of gathering bands, the band regions overlapping in the image makes it difficult or impossible to designate the band of interest with the pointing unit. (p. 3, 2nd paragraph).” These problems are solved via the system by (1) altering a coverage size and a display size of the region on an electrophoresis lane (claim 1); or by (2) switching/altering the selected band to a band immediately before or after the former band in the region along the electrophoresis lane (claim 4).

Applicants respectfully contend that none of the cited prior art references teaches or suggests such (1) “a region altering unit for altering a coverage size and a display size of the region on ONE electrophoresis lane” and “a selection candidate displaying unit for displaying bands within the region on the electrophoresis lane in a selection candidate state”; or (2) “a selection candidate display altering unit for altering the band in the selection candidate state to a band immediately before or after the former band in the region along the electrophoresis lane” according to the invention.

In contrast, as admitted by the Examiner (p. 3, line 3-4 of the outstanding office action), Bacus does not concern any electrophoresis band in a lane. The alleged **region** in Fig. 14 of Bacus is merely any “POINT of interest (col. 7, line 2; col. 11, line 67)” in “a basal layer 431a of a cut cross-section of a rat esophagus (col. 11, lines 62-63)” on the screen or window, rather than a REGION including several bands along an electrophoresis lane.

Casavant was relied upon by the Examiner to compensate for the deficiencies. However, Casavant merely shows **many** electrophoresis bands in the lanes 1-N in lines (Fig. 5B; “*Items included in the Draw Mode menu are as follows: Show Lanes, which draws in additional vertical grid lines which divide the gel image on a lane by lane basis (in this mode lines are drawn in at the inter-lane position closest to the pointing device arrow)*” col. 19, lines 48-52), but NOT any region including several bands along **only one** of the electrophoresis lanes 1-N. Casavant only selects a band by a mouse or the like, but not a band contrasted in a region on one electrophoresis lane shown in Figs. 5-6. It was the region which allows contrasting the several bands therein from other bands on the same electrophoresis lane or on other lanes. The region makes one or some of the selected bands therein appear distinctive. In addition, Casavant does not alter a coverage size or a display size of the region on an electrophoresis lane. Neither does Casavant switch/alter the selected band to a band immediately before or after the former band in the region along the electrophoresis lane.

Applicants further contend that the combination of references used by the Examiner merely consists of selecting bits and pieces from each reference, and then combining those bits and pieces using knowledge or hindsight gleaned from the disclosure of the present invention as a guide to support the combination. For example, replacing Bacus’ “basal layer 431a of a cut cross-section of a rat esophagus” with only one of the electrophoresis lanes 1-N in Casavant (rather than ALL of the electrophoresis lanes 1-N in Casavant, which is more intuitive for one skilled in the art as Casavant processes by each band, e.g., monitoring band intensity, coordinate, size etc. in claim 3). The well established rule of law is that each prior art reference must be evaluated as an entirety, and that all of the prior art must be considered as a whole,” *Panduit Corp. v. Dennison Mfg. Co.*, 227 USPQ 337, 344 (Fed. Cir. 1985). See *Para-Ordinance Mfg. Inc. v. SGS Importers Intl.*, Inc., 73 F.3d 1085, 37 USPQ2d 1237 (Fed. Cir. 1995) (“Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor.”). Casavant does not alter a coverage size or a display size of the region on an electrophoresis lane. Neither does Casavant switch/alter the selected band to a band immediately before or after.

Saito was relied upon by the Examiner to teach pressing a pre-determined key of a keyboard to alter a coverage size or a display size of a region 22 in Figs. 6-9. Saito simply inverts image data within a square-shaped general region surrounding a pointer (Abstract) thereby alternately displaying the square-shaped region of different sizes surrounding a pointer (Fig. 10) upon pressing a predetermined key of a keyboard so as to make the position

of the pointer stand out (col. 2, lines 1-3). Saito does not alter a coverage size or a display size of a region including several bands on an electrophoresis lane upon pressing a predetermined key of a keyboard. Neither does Saito switch/alter the selected band to a band immediately before or after in the region along the electrophoresis lane.

In short, none of the references teaches “altering a coverage size and a display size of ***a region including several bands along one electrophoresis lane***” or “switch/alter the selected band to a band immediately before or after in the region along the electrophoresis lane” as the invention. Accordingly, none of the references teaches or suggests highlighting one or all of the bands in the selected region on one electrophoresis lane, i.e., single-band selection mode and all-band selection mode.

“It is never appropriate to rely solely on “common knowledge” in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based. *In re Zurko*, 258 F.3d 1379, 1385, 59 USPQ2d at 1697 (Fed. Cir. 2001) (“[T]he Board cannot simply reach conclusions based on its own understanding or experience-or on its assessment of what would be basic knowledge or common sense. Rather, the Board must point to some concrete evidence in the record in support of these findings.”). As the court held in Zurko, an assessment of basic knowledge and common sense that is not based on any evidence in the record lacks substantial evidence support. *Id.* at 1385, 59 USPQ2d at 1697. See also *In re Lee*, 277 F.3d 1338, 1344-45, 61 USPQ2d 1430, 1434-35 (Fed. Cir. 2002) (In reversing the Board’s decision, the court stated “ ‘common knowledge and common sense’ on which the Board relied in rejecting Lee’s application are not the specialized knowledge and expertise contemplated by the Administrative Procedure Act. Conclusory statements such as those here provided do not fulfill the agency’s obligation. The Board cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims, but must set forth the rationale on which it relies.”). “As such the Examiner shall provide “some concrete evidence in the record in support of” factual assertion to rely solely on “common knowledge” in the art as the principal evidence for combining the references in the particular manner as suggested by the Examiner.

Under the current case law and MPEP 2144.03, Applicants hereby respectfully assert that the Examiner shall not rely upon the knowledge of one skilled in the art without basing upon concrete evidence in the record, i.e., statements in the prior art, in support of the alleged obviousness (p. 3 lines 5-10 of the outstanding office action) for one skilled in the art to combine Bacus and Casavant in the particular manner. Applicants invite the Examiner to

provide a prior art reference that would motivate combining the teachings in Bacus and Casavant.

Although the invention applies the general mechanisms of “altering a display size of a region” and “repositioning a selected region of interest” as disclosed in Bacus and of “pressing a pre-determined key of a keyboard to trigger a particular action” as disclosed in Saito, the invention applies the mechanisms to “the region including several bands on an electrophoresis lane”, to achieve unexpected results or properties. For example, to designate the band of interest with the pointing unit even when the band of interest is very close to another band or is in the middle of a group of gathering bands (p. 3, 2nd paragraph). The presence of the unexpected properties is evidence of nonobviousness. MPEP§716.02(a).

“Presence of a property not possessed by the prior art is evidence of nonobviousness. In re Papesch, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) (rejection of claims to compound structurally similar to the prior art compound was reversed because claimed compound unexpectedly possessed anti-inflammatory properties not possessed by the prior art compound); Ex parte Thumm, 132 USPQ 66 (Bd. App. 1961) (Appellant showed that the claimed range of ethylene diamine was effective for the purpose of producing " 'regenerated cellulose consisting substantially entirely of skin' " whereas the prior art warned "this compound has 'practically no effect.' ").

Applicants contend that neither the individual references, nor their combinations teaches or discloses each and every feature of the present invention as disclosed in independent claims 1, 4 and 8-9. As such, the present invention as now claimed is distinguishable and thereby allowable over the rejections raised in the Office Action. The withdrawal of the outstanding prior art rejections is in order, and is respectfully solicited.

In view of all the above, clear and distinct differences as discussed exist between the present invention as now claimed and the prior art reference upon which the rejections in the Office Action rely, Applicants respectfully contend that the prior art references cannot anticipate the present invention or render the present invention obvious. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance

of the above-captioned application, the Examiner is invited to contact the Applicants' undersigned representative at the address and phone number indicated below.

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